Log Event A

Borehole # 30-01-06

Borehole Information

Farm : C	**Tank :** C-101	**Site Number :** 299-E27-59
N-Coord : 42,676	**W-Coord :** 48,328	**TOC Elevation :** 647.59
Water Level, ft :	**Date Drilled :** 1/31/1970	

Casing Record

Type : Steel-welded	Thickness : 0.280	ID, in. : 6
Top Depth, ft. : 0	Bottom Depth, ft. : 100	

Borehole Notes:
This borehole was drilled in January 1970 and completed to a depth of 100 ft with 6-in. casing. The casing thickness is presumed to be 0.280 in., on the basis of the published thickness for schedule-40, 6-in. steel tubing. No information was available that indicated the borehole was perforated or grouted; therefore, it is assumed that the borehole was not perforated or grouted. The top of the casing, which is the zero reference for the SGLS, is even with the tank farm ground surface.

Equipment Information

Logging System : 2	**Detector Type :** HPGe	**Detector Efficiency:** 35.0 %
Calibration Date : 10/1996	**Calibration Reference :** GJO-HAN-13	**Logging Procedure :** P-GJPO-1783

Log Run Information

Log Run Number : 1	**Log Run Date :** 03/28/1997	**Logging Engineer:** Bob Spatz
Start Depth, ft.: 98.5	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 38.0	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 2	**Log Run Date :** 03/31/1997	**Logging Engineer:** Bob Spatz
Start Depth, ft.: 39.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 0.0	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

Log Run Number : 3	**Log Run Date :** 04/01/1997	**Logging Engineer:** Bob Spatz
Start Depth, ft.: 45.0	**Counting Time, sec.:** 100	**L/R :** L **Shield :** N
Finish Depth, ft. : 28.5	**MSA Interval, ft. :** 0.5	**Log Speed, ft/min.:** n/a

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Borehole 30-01-06

Analysis Information

Analyst : D.L. Parker

Data Processing Reference : P-GJPO-1787 Analysis Date : 06/27/1997

Analysis Notes :

This borehole was logged by the SGLS in two log runs, with a third log run performed as a rerun log to provide an additional quality check. The pre- and post-survey field verification spectra met the acceptance criteria established for the peak shape and detector efficiency, confirming that the SGLS was operating within specifications. The energy calibration and peak-shape calibration from these spectra were used to establish peak resolution and channel-to-energy parameters used in processing the spectra acquired during the logging operation. There was some gain drift during logging operations and it was necessary to adjust the established channel-to-energy parameters during processing of log data to maintain proper peak identification.

Casing correction factors for a 0.280-in.-thick steel casing were applied during analysis.

The man-made radionuclides detected in this borehole were Cs-137 and Co-60. Continuous Cs-137 contamination was detected from the ground surface to 7.5 ft, 14 to 20 ft, 35 to 38.5 ft, and 97.5 ft to the bottom of the logged interval. Scattered occurrences of Cs-137 were also detected between 21 and 30.5 ft and at 55.5 ft. Co-60 was detected only at 37 ft.

The K-40 concentrations increase from 38 to 40 ft and then maintain a background concentration of about 14 pCi/g to 45 ft. The K-40 concentrations are slightly lower from 45.5 to about 57 ft and then increase gradually from 57 to 89 ft.

Additional information and interpretations of log data are included in the main body of the Tank Summary Data Report for tank C-101.

Log Plot Notes:

Separate log plots show the man-made and the naturally occurring radionuclides. The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations. Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the MDL. The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.

A combination plot includes the man-made and natural radionuclides, the total gamma derived from the spectral data, and the Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data. No attempt has been made to adjust the depths of the gross gamma logs to coincide with the SGLS data.

The interval from 28.5 to 45 ft was relogged as an additional quality check. A log of the re-run was prepared along with data from the original run and is provided with this data set.

A plot of representative historical gross gamma-ray logs from 1975 to 1992 is included. The headings of the plots identify the date on which the data in the plots were gathered.